Cruise Report

R/V JOHNSON Cruise 143

22-29 July, 1982

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U.S. Geological Survey
Woods Hole, MA 02543

CRUISE REPORT

Vessel: R/V JOHNSON and submersible JOHNSON-SEA-LINK 1.

Area of Operation: Hudson Canyon

Dates: Depart Woods Hole 2000(EDT) 22 July, 1982
Arrive Cape May, NJ 1300 (EDT) 29 July, 1982

Personnel: George Chapman, Captain
Robert Jones, Co-Chief Scientist, Harbor Branch Foundation
Churchill Crimes, Co-Chief Scientist, Rutgers University
David Twichell, Scientist, USGS
Gregg Miller, Technician, USGS
Steve Turner, Graduate Student, Rutgers University
Peter Hood, Graduate Student, Rutgers University

Equipment: Northstar Loran C
Klein sidescan sonar
ORE 3.5 kHz echo sounder

Objectives: The R/V JOHNSON cruise 143 was a cooperative cruise between biologists from Harbor Branch Foundation and Rutgers University and myself. The objective of the cruise was to assess the importance of erosion by biological organisms on the Outer Continental Shelf around the head of Hudson Canyon. The study area was an area around the head of the canyon in 100-240 m water depths where a stiff silty clay of Pleistocene age is exposed on the sea floor, and is heavily burrowed by tilefish. Tilefish can be in excess of 1 m in length and dig funnel shaped holes in the stiff silty clay that can be as much as 5 m in diameter at the top and greater than 3 m deep. These burrows were surveyed by sidescan sonar to map their distribution, and then observations from the submersible JOHNSON-SEA-LINK confirmed sonograph interpretations and provided an oportunity to study fish behavior and make detailed observations of the burrows.

Narrative:

22 July,	2000(EDT)	Depart Woods Hole
23 July,	0830 (EDT)	Arrive at dive site on western side of Hudson Canyon
	0936	Launch submersible for dive 1233
	1305	Recover submersible
	1440-1624	Sidescan sonar and 3.5 kHz survey
	1714-1936	Submersible dive 1234
24 July,	0800-1139	Submersible dive 1235
	1230-1540	Sidescan sonar and 3.5 kHz survey
	1612-1905	Submersible dive 1236
25 July	0807-1117	Submersible dive 1237
	1214-1452	Sidescan sonar and 3.5 kHz survey
	1609-1830	Submersible dive 1238
	1948-0112	3.5 Khz survey of the west side of Hudson Canyon

26 July	0836-1503	Sidescan sonar and 3.5 kHz survey of the shelf on the eastern side of Hudson Canyon
	1619-1922	Submersible dive 1239
	2050-2320	3.5 kHz survey of eastern wall of Hudson Canyon
27, July	0831-1115	Submersible dive 1240
	1559-1833	Submersible dive 1241
28, July	1000-1626	Sidescan and 3.5 kHz survey of the shelf on the western side of Hudson Canyon
29, July	1300	Arrive Cape May, NJ.

Tabulated Information:

A. Days at sea: ~~8~~ 7

B. Seismic Survey:

Equipment	Time	Latitude	Longitude
Deploy 3.5 and sidescan	1440, 23 July	39.27.7	72 19.2
Recover " " "	1624, 23 July	39 26.7	72 18.6
Deploy " " "	1230, 24 July	39 28.2	72 18.9
Recover " " "	1540, 24 July	39 28.4	72 18.2
Deploy " " "	1214, 25 July	39 33.7	72 10.4
Recover " " "	1452, 25 July	39 31.1	72 12.0
Deploy 3.5	1948, 25 July	39 26.6	72 19.1
Recover "	0112, 26 July	39 27.8	72 17.6
Deploy 3.5 and sidescan	0836, 26 July	39 32.4	72 10.5
Recover " " "	1504, 26 July	39 34.1	72 12.0
Deploy 3.5	2050, 26 July	39 30.7	72 16.0
Recover "	2320, 26 July	39 31.0	72 17.1
Deploy 3.5 and sidescan	1000, 28 July	39 29.8	72 26.5
Recover " " "	1626, 28 July	39 19.1	72 21.3

C. Amount of seismic data collected:

System	Time spent	Km of data collected
3.5 kHz	28 hr 19 min	156 km
Sidescan	20 hr 25 min	106 km

TABLE. JOHNSON-SEA-LINK DIVE SUMMARY

Submersible: JSL-I			Observers		On Bottom					Off Bottom									
Cruise	Dive#	Date	Forward	Dive Chamber	Time (24 hr)	Depth (m)	Loran C Sta A	Loran C Sta B		Depth (m)			Video	Photographs	Transcript	Temperature	Current	Collection	Lockout Dives
J-143 II	1233	23-VIII-82	Flake/ Jones	Hall/ Turner	0936	150	15022.6	43071.4	1305	154	15020.9	43072.9			x	x	x		
"	1234	23-VIII-82	Liberatore/ Grimes	Seymour/ Hood	1714	170	15019.4	43076.0	1936	152	15022.7	43068.8	x	x	x	x	x		
"	1235	24-VIII-82	Flake/ Jones	Liberatore/ Turner	0800	174	15019.2	43075.1	1139	173	Same	Same	x	x	x	x	x		
"	1236	24-VIII-82	Liberatore/ Grimes	Seymour/ Hood	1612	172	15019.2	43075.4	1905	174	15019.6	43075.8	x	x	x	x	x		
"	1237	25-VIII-82	Flake/ Jones	Morris/ Turner	0807	227	14964.6	43106.4	1117	227	14966.6	43103.5	x	x	x	x	x		
"	1238	25-VIII-82	Liberatore/ Grimes	Morris/ Twichell	1609	174	15020.2	43074.0	1830	174	15019.5	43075.8	x	x	x	x	x	x	
"	1239	26-VIII-82	Flake/ Grimes	Hall/ Miller	1619	174	15019.7	43075.7	1922	174	Same	Same	x	x	x	x	x	x	
"	1240	27-VIII-82	Liberatore/ Jones	Seymour/ Turner	0831	151	14964.8	43131.1	1115	152	14968.7	43124.5		x	x	x	x		
"	1241	27-VIII-82	Flake/ Twichell	Seymour/ Grimes	1559	129	15017.5	43117.5	1833	136	15018.0	43118.9	x	x	x	x	x	x	

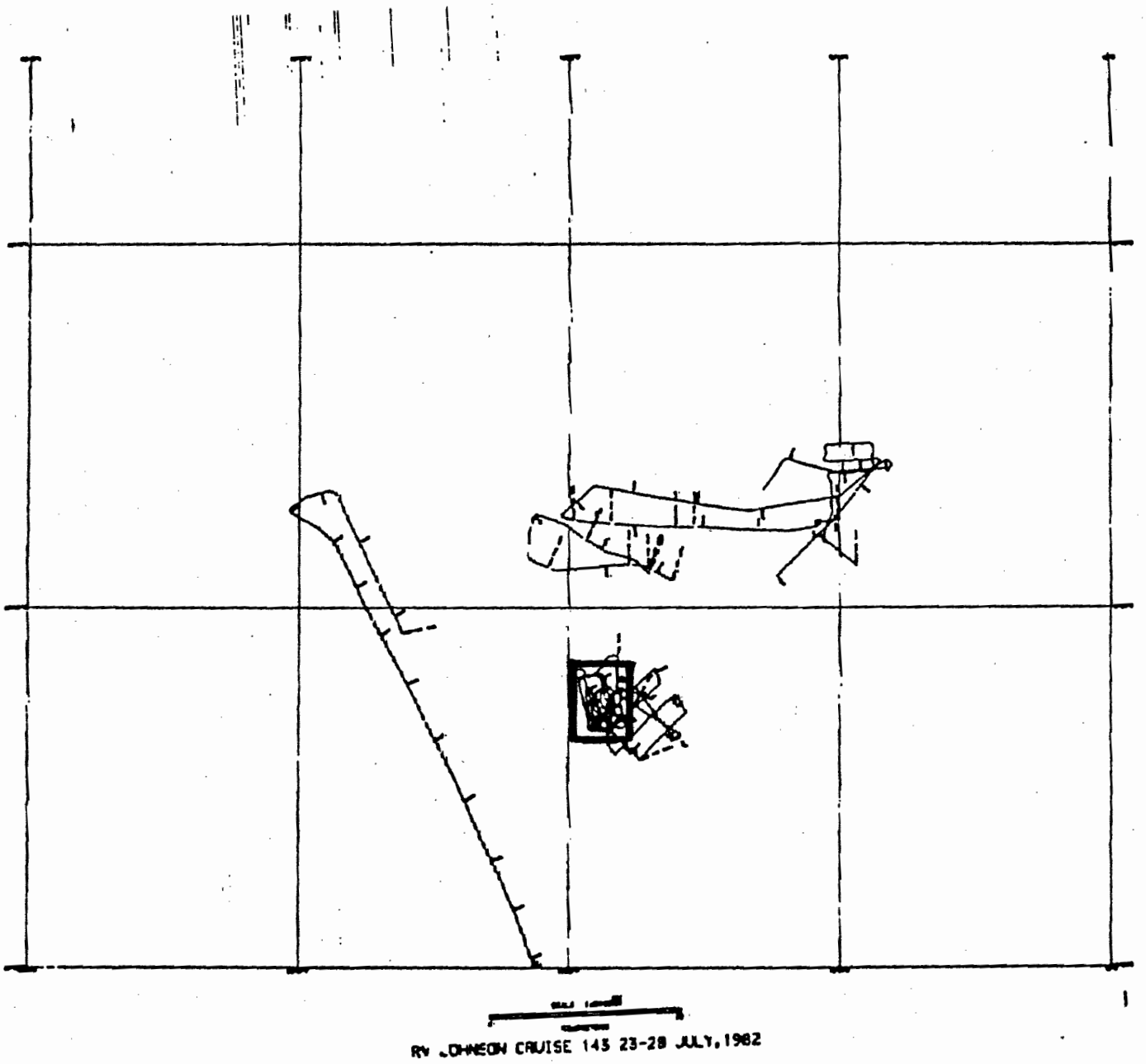

Figure 1. Track lines along which 3.5 kHz and sidescan sonar data were collected around the head of Hudson Canyon during R/V JOHNSON Cruise 143. Detailed area in enlarged in Figure 2.

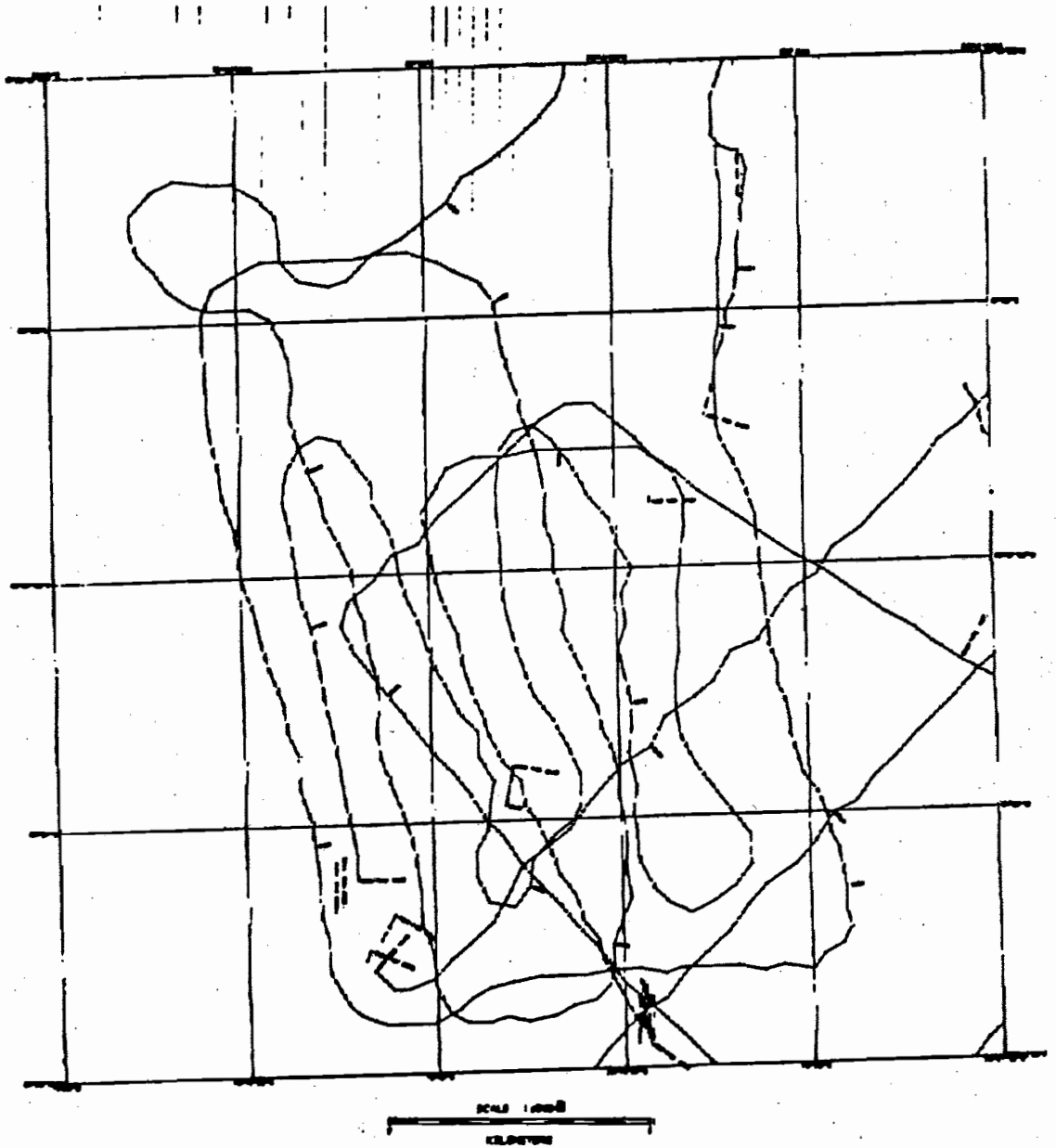

Figure 2. Detail of sidescan sonar and 3.5 kHz profiles collected around the dive site on the western side of Hudson Canyon. Location of Figure 2 shown in Figure 1.